AMENDMENTS TO THE CLAIMS

1-66. (Canceled)

67. (Currently Amended) A signal transmission system comprising:

a pair of cross-coupled differential amplifiers;

a first transmission member having a first length and an impedance less than 100 ohms, the first transmission member coupled to a first of the pair of cross-coupled differential amplifiers;

a second transmission member having a second length, the second transmission member coupled to a second of the pair of cross-coupled differential amplifiers;

a first and a second signal source respectively having first and second signal outputs respectively coupled to the first and second transmission members;

a termination circuit connected to at least one of the first transmission member and the second transmission member; and

an impedance adjusting component coupled to the second transmission member and adapted to affect, by the coupling thereto, a signal propagation factor of the second transmission member, whereby a relationship may be established between respective transmission times through the first and second transmission members of first and second signals received at the first and second transmission members from the respective first and second signal source outputs.

68. (Previously Presented) The signal transmission system of claim 67 wherein the impedance adjusting component comprises:

an electrical inductor.

69. (Previously Presented) The signal transmission system of claim 68 wherein the electrical inductor comprises a spiral inductor.

70. (Previously Presented) The signal transmission system of claim 67 wherein the impedance adjusting component comprises:

a material having a magnetic permeability, the material adapted to be incorporated into the second transmission member.

71. (Previously Presented) The signal transmission system of claim 67 wherein the impedance adjusting component comprises:

an electrical capacitor.

72. (Previously Presented) The signal transmission system of claim 67 wherein the relationship established between respective transmission times comprises equalization of the respective transmission times.

73. (Previously Presented) The signal transmission system of claim 67 wherein the first length is different from the second length and the respective transmission times through the respective first and second transmission members are equal.

74. (Previously Presented) The signal transmission system of claim 67 wherein the first transmission member is formed of a transmission medium comprising an electrical transmission medium.

75. (Previously Presented) The signal transmission system of claim 74 wherein the electrical transmission medium comprises a first conductor, a second conductor, and a dielectric material disposed between the first conductor and the second conductor.

76. (Previously Presented) The signal transmission system of claim 75 wherein the electrical transmission medium comprises:

a first conductor;

a second conductor; and

an evacuated region disposed between the first conductor and the second conductor.

77. (Previously Presented) The signal transmission system of claim 74 wherein the electrical transmission medium comprises first and second conductors disposed in a coaxial relationship to one another and a dialectic medium disposed between the first and second conductors.

78. (Previously Presented) The signal transmission system of claim 67 wherein the first transmission member is formed of a transmission medium comprising an optical transmission medium.

79. (Previously Presented) The signal transmission system of claim 67 wherein the impedance adjusting component comprises a plurality of capacitors coupled to the second transmission member at a respective plurality of coupling points.

80. (Previously Presented) The signal transmission system of claim 67 wherein the first and second signals comprise first and second digital signals.

81. (Previously Presented) The signal transmission system of claim 67 further comprising:

first and second signal receivers coupled to the first and second transmission members at respective first and second signal inputs.

82. (Previously Presented) The signal transmission system of claim 81 wherein the first input has an input impedance substantially equal to a characteristic impedance of the first transmission member and the second input has an input impedance substantially equal to a characteristic impedance of the second transmission member.

83-85. (Canceled)

86. (Previously Presented) The signal transmission system of claim 81 wherein the first receiver comprises a first input adapted to be coupled to the first transmission member and a second input adapted to be coupled to a reference signal source.

87. (Currently Amended) A signal transmission system comprising:

a pair of cross-coupled differential amplifiers;

a first transmission member having a first length and an impedance less than 100 ohms, the first transmission member coupled to a first of the pair of cross-coupled differential amplifiers;

a second transmission member having a second length, the second transmission member coupled to a second of the pair of cross-coupled differential amplifiers;

a signal receiver having first and second signal inputs coupled to the first and second transmission members respectively;

first and second signal sources coupled to the first and second transmission members respectively;

a termination circuit connected to at least one of the first transmission member and the second transmission member for terminating at least one of the first transmission member and the second transmission member in a characteristic impedance of at least one of the first transmission member and the second transmission member; and

an impedance adjusting component coupled to the second transmission member and adapted to affect, by the coupling thereto, a signal propagation factor of the second transmission member, whereby a relationship may be established between respective transmission times through the first and second transmission members of first and second signals received at the first and inputs from the first and second signal sources respectively.

88. (Currently Amended) A signal transmission system comprising:

a first and a second signal source respectively having first and second signal outputs;

a first transmission member coupled to the first output, the first transmission member having a first length, the first transmission member having an impedance less than 100 ohms;

a second transmission member coupled to the second output, the second transmission member having a second length different from the first length, the second transmission member having a second characteristic impedance, whereby a relationship may be established between respective transmission

times through the first and second transmission members of first and second signals received at the first and second transmission members from the respective first and second signal source outputs by changing the second impedance;

a pair of cross-coupled differential amplifiers, a first of the pair of cross-coupled differential amplifiers coupled to the first transmission member, a second of the pair of cross-coupled differential amplifiers coupled to the second transmission member; and

a termination circuit connected to at least one of the first transmission member and the second transmission member for terminating at least one of the first transmission member and the second transmission member.

89. (Previously Presented) The signal transmission system of claim 88 wherein the first characteristic impedance depends on a magnetic permeability of a material of the first transmission member.

90-91. (Canceled)

92. (Currently Amended) A method of synchronizing first and second operations of respective first and second cross-coupled differential amplifiers comprising:

receiving a first signal transition at the first cross-coupled differential amplifier from a first signal source through a first transmission member, the first transmission member having a first signal propagation factor and a first geometric length, the first signal propagation factor related to an impedance less than 100 ohms of the first transmission member;

receiving a second signal transition at the second cross-coupled differential amplifier from a second signal source through a second transmission member, the second transmission member having a second signal propagation factor and a second geometric length, the second signal propagation factor related to a second characteristic impedance of the second transition member, the second geometric length different from the first geometric length;

terminating the first characteristic impedance of the first transmission member and the second characteristic impedance of the second transmission member; and

receiving the first and second signal transitions at the first and second transmission members synchronously.

93. (Previously Presented) The method of claim 92 wherein the receiving the first and second signal transitions at the first and second transmission members synchronously comprises receiving the first and second signal transitions at the first and second transmission members substantially simultaneously.

94. (Previously Presented) The method of claim 92 wherein the second characteristic impedance depends on an impedance of at least one impedance modifying component coupled to the second transmission member.

95. (Previously Presented) The method of claim 94 wherein the impedance modifying component comprises a spiral inductor.

96. (Previously Presented) The method of claim 94 wherein the impedance modifying component comprises a capacitor.

97. (Previously Presented) The method of claim 92 wherein the second characteristic impedance depends on a magnetic permeability of a material incorporated into the second transmission member.

98. (Previously Presented) The signal transmission system of claim 67, wherein the termination circuit terminates at least a first characteristic impedance of the first transmission member and the second characteristic impedance of the second transmission member.

99. (Currently Amended) An integrated circuit interconnection comprising:

a plurality of transmission lines;

at least one of the transmission lines having a characteristic impedance less than 100 Ohms, the at least one transmission line including a first end and a second end;

a driver coupled to the first end of the at least one transmission line;

a termination circuit at the second end of the at least one transmission line having an impedance corresponding to the characteristic impedance of the transmission line, the termination circuit comprising an amplifier circuit comprising a pair of ~~cross-coupled~~ cross-coupled differential amplifiers coupled to the second end of the at least one transmission line; and

a plurality of components selected from the group consisting of capacitive elements, inductive elements and a combination of capacitive and inductive elements, the components being connected at spaced intervals to the at least one transmission line between the first and second ends to change an apparent length of the at least one transmission line to match with at least one other of the plurality of transmission lines.

100. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the components change the propagation constant and delay time of the transmission line.

101. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the components are a plurality of capacitive elements.

102. (Previously Presented) The integrated circuit interconnection of claim 101, wherein the capacitive elements are selected from the group consisting of metal-metal, metal-polysilicon and polysilicon-polysilicon capacitors.

103. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the components are a plurality of inductive elements.

104. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the components are a combination of capacitive and inductive elements.

105. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the transmission line has a characteristic impedance of less than 50 Ohms.

106. (Previously Presented) The integrated circuit interconnection of claim 99, wherein a plurality of interconnection lines are connected to the at least one transmission line.

107. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the capacitive elements are gate capacitances of field effect transistors used as capacitors.

108. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the inductive elements are spiral inductors serially implanted in the at least one transmission line.

109. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the inductive elements are formed by depositing material with a higher magnetic permeability on the at least one transmission line for increasing self inductance of the at least one transmission line.

110. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the termination circuit is formed in complementary metal-oxide semiconductor (CMOS) technology on the second end of the at least one transmission line.

111. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the termination circuit comprises a differential receiver coupled to the second end of the at least one transmission line.

112. (Currently Amended) An integrated circuit interconnection comprising:

a transmission line having a characteristic impedance less than 100 Ohms, the transmission line including a first end and a second end;

a driver coupled to the first end of the transmission line;

a termination at the second end of the transmission line having an impedance corresponding to the characteristic impedance of the transmission line; and

a plurality of components selected from the group consisting of capacitive elements, inductive elements and a combination of capacitive and inductive elements, the components being connected at spaced intervals to the transmission line between the first and second ends to change an apparent length of the transmission line, wherein the termination circuit comprises an amplifier circuit coupled to the second end of the transmission line, wherein the termination circuit comprises an amplifier circuit comprising a pair of ~~cross coupled~~ cross-coupled differential CMOS amplifiers coupled to the second end of the transmission line, and wherein each cross-coupled differential amplifier comprises:

a first transistor of a first conductivity type having [[a]] first and second source/drain regions ~~region, a drain region,~~ and a gate opposing a body region;

a second transistor of a second conductivity type having [[a]] first and second source/drain regions ~~region, a drain region,~~ and a gate opposing a body region;

a signal input node coupled to one of the source/drain regions of ~~the source region for~~ the first transistor;

a signal output node coupled to the other source/drain region ~~regions~~ for the first transistor and to one of the source/drain regions of the second transistor; and

a third transistor of [[a]] the first conductivity type having having [[a]] first and second source/drain regions ~~region, a drain region,~~ and a gate opposing a body region, wherein the signal input node is coupled to the gate of the third transistor, wherein a first of the source/drain regions of ~~the drain region~~ is coupled to a ~~positive~~ first voltage supply and the second of the source/drain regions ~~region~~ is coupled to a ~~lower~~ second voltage potential, and wherein the first of the source/drain regions ~~drain region~~ is coupled to the gate of the first transistor;

the second end of the transmission line being coupled to the signal input of a first one of the pair of ~~cross coupled~~ cross-coupled differential CMOS amplifiers; and

a second transmission line coupled to the signal input of a second one of the pair of ~~cross coupled~~ cross-coupled differential CMOS amplifiers.

113. (Currently Amended) The integrated circuit interconnection of claim 112, wherein the pair of ~~cross coupled~~ cross-coupled differential CMOS amplifiers ~~comprise~~ comprises a pair of CMOS amplifiers.

114. (Currently Amended) The integrated circuit interconnection of claim 112, wherein:

the first transistor of [[a]] the first conductivity type ~~includes~~ comprises an n-channel metal-oxide semiconductor (NMOS) transistor, and

~~wherein~~ the second transistor of [[a]] the second conductivity type ~~includes~~ comprises a p-channel metal-oxide semiconductor (PMOS) transistor.

115. (Currently Amended) The integrated circuit interconnection of claim 114, wherein each amplifier in the amplifier circuit includes a fourth transistor of [[a]] the first conductivity type having [[a]] first and second source/drain regions ~~region, a drain region,~~ and a gate opposing a body region, wherein one of the source/drain ~~region~~ regions is coupled to one of the source/drain regions of ~~region for~~ the first transistor.

116. (Currently Amended) The integrated circuit interconnection of claim 115, wherein the signal output node for each amplifier is ~~cross coupled~~ cross-coupled to the ~~gate~~ gates of the second transistor and the fourth transistor on the other amplifier.

117. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the signal input node for each amplifier is coupled to a transmission line which has a length of at least 1000 micrometers.

118. (Previously Presented) The integrated circuit interconnection of claim 99, wherein the signal input node for each amplifier is coupled to a transmission line which has a length of at least 500 micrometers.

119. (Currently Amended) An integrated circuit interconnection comprising:

a transmission line having a characteristic impedance less than 100 Ohms, the transmission line including a first end and a second end;

a driver coupled to the first end of the transmission line;

a termination circuit at the second end of the transmission line having an impedance corresponding to the characteristic impedance of the transmission line; and

a plurality of components selected from the group consisting of capacitive elements, inductive elements and a combination of capacitive and inductive elements, the components being connected at spaced intervals to the transmission line between the first and second ends to change an apparent length of the transmission line, wherein the termination circuit comprises a pair of cross-coupled differential amplifier circuits coupled to the second end of the transmission line, each of the cross-coupled differential amplifier circuits comprising:

a first transistor of a first conductivity type, a signal input node coupled to a source/drain region of the first transistor;

a second transistor of a second conductivity type, ~~wherein~~ the first and second transistors [[are]] being coupled at a source/drain region; [[and]]

a signal output node coupled to the source/drain region of the first and second transistor in the ~~current sense~~ amplifier circuit; and[[,]]

a third transistor, the signal ~~output~~ input node further coupled to a gate of [[a]] the third transistor, and a source/drain region of the third transistor being coupled to a gate of the first transistor.

120. (Currently Amended) The integrated circuit interconnection of claim 119, wherein a source/drain region of [[the]] each third transistor is coupled to the gate of each respective first transistor ~~a source region of the second transistor, and wherein a source/drain region of the third transistor is coupled to the signal input~~.

121. (Currently Amended) The ~~current sense amplifier~~ integrated circuit interconnection of claim 119, wherein:

[[the]] each first transistor of a first conductivity type ~~includes~~ comprises an n-channel metal oxide semiconductor (NMOS) transistor, and

~~wherein the~~ each second transistor of a second conductivity type ~~includes~~ comprises a p-channel metal oxide semiconductor (PMOS) transistor.

122. (Currently Amended) The ~~current sense amplifier~~ integrated circuit interconnection of claim 119, wherein the source/drain region for the first and the second ~~transistor~~ transistors in ~~the first amplifier~~ a first of the pair of cross-coupled differential amplifier circuits are coupled to the gate ~~gates~~ of the second transistor in ~~the first and the second amplifier~~ a second of the pair of cross-coupled differential amplifier circuits.

123. (Currently Amended) The ~~current sense amplifier~~ integrated circuit interconnection of claim 119, wherein [[the]] each third transistor [[is]] comprises an n-channel metal oxide semiconductor (NMOS) transistor.

124. (Currently Amended) The ~~current sense amplifier~~ integrated circuit interconnection of claim 119, wherein:

the signal input node of ~~the first amplifier~~ a first of the pair of cross-coupled differential amplifier circuits receives an input current, and

~~wherein~~ the signal input node of ~~the second amplifier~~ a second of the pair of cross-coupled differential amplifier circuits receives a reference current.

125. (Currently Amended) An integrated circuit interconnection for minimizing clock skews among a plurality of transmission lines, comprising:

at least one transmission line having a characteristic impedance less than 100 Ohms, the at least one transmission line including a first end and a second end;

a driver coupled to the first end of the at least one transmission line;

a termination circuit at the second end of the at least one transmission line having an impedance corresponding to the characteristic impedance of the at least one transmission line for reducing ringing and reflections, the termination including a pair of cross-coupled differential amplifiers coupled to the second end of the at least one transmission line; and

a plurality of components selected from the group consisting of capacitive elements, inductive elements and a combination of capacitive and inductive elements, the components being connected at spaced intervals to the at least one transmission line between the first and second ends for changing the propagation constant and delay time of the at least one transmission line so as to match with at least one other of the plurality of transmission lines.

126. (Previously Presented) The integrated circuit interconnection of claim 125, wherein the components are a combination of capacitive and inductive elements.

127. (Previously Presented) The integrated circuit interconnection of claim 125, wherein a plurality of interconnection lines are connected to the at least one transmission line.

128. (Previously Presented) The integrated circuit interconnection of claim 125, wherein the components are a plurality of capacitive elements.

129. (Previously Presented) The integrated circuit interconnection of claim 128, wherein the capacitive elements are selected from the group consisting of metal-metal, metal-polysilicon and polysilicon-polysilicon capacitors.

130. (Previously Presented) The integrated circuit interconnection of claim 128, wherein the capacitive elements are gate capacitances of field effect transistors used as capacitors.

131. (Previously Presented) The integrated circuit interconnection of claim 125, wherein the components are a plurality of inductive elements.

132. (Previously Presented) The integrated circuit interconnection of claim 131, wherein the inductive elements are spiral inductors serially implanted in the at least one transmission line.

133. (Previously Presented) The integrated circuit interconnection of claim 131, wherein the inductive elements are formed by depositing material with a higher magnetic permeability on the at least one transmission line for increasing self inductance of the at least one transmission line.

134. (Currently Amended) A method for fabricating an integrated circuit comprising the steps of:

forming a plurality of transmission lines having a characteristic impedance, each of the transmission lines including a first end and a second end;

forming a driver coupled to the first end of one of the transmission lines;

forming a pair of cross-coupled <u>differential</u> amplifiers, one of the pair of cross-coupled <u>differential</u> amplifiers coupled to the second end of the one transmission line and having an input impedance corresponding to the characteristic impedance of the one transmission line; and

forming a plurality of components connected at spaced intervals to the one transmission line between the first and second ends to change an apparent length of the one of the transmission lines to match with at least one other of the plurality of transmission lines, the components being selected from the group consisting of capacitive elements, inductive elements and a combination of capacitive and inductive elements.

135. (Previously Presented) The method of claim 134, wherein the components are a plurality of capacitive elements.

136. (Previously Presented) The method of claim 135, wherein the capacitive elements are selected from the group consisting of metal--metal, metal-polysilicon and polysilicon--polysilicon capacitors.

137. (Previously Presented) The method of claim 135, wherein the capacitive elements are gate capacitances of field effect transistors used as capacitors.

138. (Previously Presented) The method of claim 134, wherein the components are a plurality of inductive elements.

139. (Previously Presented) The method of claim 138, wherein the inductive elements are spiral inductors serially formed in the transmission lines.

140. (Previously Presented) The method of claim 138, wherein the inductive elements are formed by depositing material with a higher magnetic permeability on the transmission lines for increasing self inductance of the transmission lines.

141. (Previously Presented) The method of claim 134, wherein the components are a combination of capacitive and inductive elements.

142. (Previously Presented) The method of claim 134, wherein the transmission lines have a characteristic impedance of less than 50 Ohms.

143. (Previously Presented) The method of claim 134, further comprising forming a plurality of interconnection lines connected to the transmission lines.

144. (Currently Amended) The method of claim 134, wherein the one of the pair of cross-coupled <u>differential</u> amplifiers has an input impedance of less than 50 Ohms.